

FIRST HOST RECORD FOR *PAROXYNA DUPLA* (CRESSON) (DIPTERA: TEPHRITIDAE)^{1,2}

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ABSTRACT: The fruit fly, *Paroxyna dupla* (Cresson) was reared from blossoms of *Erigeron peregrinus* collected in the Snowy Range Mountains of Wyoming. A second species, *Tephritis signatipennis* Foote, was reared from the same plant species. Both host records are new.

Paroxyna dupla (Cresson) was described in 1907 from two specimens collected in Buelah, New Mexico and is now known to be widely distributed throughout the western United States and Canada (Novak 1974). It has been recorded at altitudes up to 3657 m on Medicine Bow Peak in Carbon County, Wyoming. Until now, its host plant has remained unknown (Wasbauer 1972, Novak 1974).

While investigating the behavior of robber flies, the author observed blossoms of *Erigeron peregrinus* (Compositae) with discolored disc flowers in a clearing 3 miles NW of Centennial, Wyoming in the Snowy Range Mountains, elevation 2613 m. Since this apparent injury resembled that previously observed in *Erigeron pumilis* blossoms which contained the puparia of *Tephritis araneosa* (Coquillett) (Lavigne 1965), several discolored blossoms were examined. Each was found to contain brown puparia. I speculated that these puparia might be those of a species of tephritid since members of the genus *Erigeron* are known to be hosts of this family of flies (Stegmaier 1968).

Subsequently 41 discolored blossoms were transported to the laboratory and placed in individual numbered vials stoppered with foam tube plugs (Gaymar identi-plugs[®]) manufactured by Gaymar Industries, Inc., One Bank Street, Orchard Park, New York 14127.

The blossoms were collected on July 27, 1980 and during the period Aug. 1-6, 108 adults of *Paroxyna dupla* emerged in the vials, 56 males and 52 females. The number emerging from individual blossoms varied from 1 to 12 with a mean of 2.6. The close correlation of male and female numbers are further support for the concept promoted by Hamilton (1967) that "the two sexes are usually produced in approximately equal numbers".

Additionally, 13 parasites (*Habrocytus* sp.) (Hymenoptera: Pteromalidae) and 1 unidentified braconid emerged from the blossoms. The parasitism rate was 10.7%. An examination of numbers of puparia, adult tephritids and

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parasites leads to the inescapable conclusion that each host was attacked by one parasite. Parasites apparently emerged through the apex of the puparia in the same manner as did the adult tephritids, i.e., by breaching the lines of cleavage around the anterior extremity of the puparium.

Blossoms were dissected to determine the actual number of puparia in order to ascertain emergence success. Out of 128 puparia only 9 contained dead pupae and, assuming one parasite per puparium for a total of 23, the data indicate an emergence success of 82 percent.

Based on an examination of discolored tissues and tunnels containing frass, it is apparent that larvae fed on developing seeds.

Three female specimens of a second species, *Tephritis signatipennis* Foote, were reared from the same series of blossoms of *E. peregrinus*. Only one fly was reared from each blossom, which contained a single puparium. This tephritid previously has been associated only with *Machaeranthera canescens* (Pursh) Gray according to Wasbauer (1972).

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